

Combating Food Insecurity with Regional Programs: Effectiveness and Future Directions

An Honors Thesis (HONR 499)

by

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Abstract

Food insecurity is a growing public health problem in the United States. While national food aid programs have made strides to combat food insecurity, research is needed that focuses on the effectiveness of regional programs, particularly because success rates of these programs vary. The current study analyzed thirty local food aid programs in the United States and assessed their impact on reducing food insecurity. Findings suggest that these programs are more effective in reducing food insecurity when they tackle local contextual factors, thus pointing to the importance of anthropological approaches in food aid programs. Based on the programs that had effective intervention methods, applications of these methods were applied to food programs and reducing food insecurity in Delaware County. The use of anthropological approaches in reducing food insecurity can be used throughout the United States to understand how food insecurity influences all the factors of a person's environment.

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Process Analysis

Exploring food insecurity and the ways communities are working to combat it was not a topic I decided right out of the gate to study. It took an entire summer internship and a year of volunteering until I came to the conclusion that I wanted to understand food insecurity and the ways to combat it. My internship during the summer of 2018 was with the Delaware County Health Department Health Inspectors. I traveled all across Delaware County shadowing the health inspectors on their inspections of houses, restaurants, stores, and pools. Every time we went out on inspections I was able to see Delaware County and the realities that many people in this county face when it comes to obtaining food. It was also through my volunteering at Inside Out Fresh Directions in downtown Muncie that I realized that I was serving children who were in food insecure households. My community service and internship were both involved in the realities of food insecurity in Delaware County. These realizations helped to push me to decide to learn about what was being done to combat food insecurity across the country, and after learning how to apply anthropological methods to the programs combating food insecurity, I could create recommendations for Delaware County to work towards to lower the food insecurity rate.

Through this process of intense research, I learned how to push myself to be a better researcher and writer. It took weeks to scour databases of current and relevant articles that detailed programs that sought to lower food insecurity and work with food insecure households. While I had specific inclusion criteria and databases to use, the number of programs in the United States that were being written about was limited. The programs that I was able to find varied in terms of size of city, location, and intervention methods used. I had to push myself constantly to keep looking for programs that were relevant to my research question. After I was

finally able to get the number of programs I set out to get, it was through the analysis of the programs that I found myself becoming an effective and efficient researcher. The analysis and creation of themes related to prevention methods pushed me to be more critical of the programs I was analyzing. Using my training in anthropology I was able to understand whether programs were efficiently working with and for their community to reach food insecure households and lower the food insecurity rate in their community. The process of this research pushed me to be a better writer and researcher in my discipline of anthropology and my future discipline of public health through learning new skills by coding data and using a deductive method in the analysis of the research.

Through the process of research, I discovered there were limits to some of the inclusion criteria that I had originally set for myself. With the lack of programs being reported on throughout the United States, I struggled to find any programs that were locations of similar size and food insecurity rate of Delaware County. Some of the programs did not list their food insecurity rate, or the rate reported in the articles were higher than the rate in Delaware County. Because of the lack of programs that took place in an area that was the size of Delaware County, I had to adjust my inclusion criteria to any programs, in any location, of any size, in the United States. Not only did I have to adjust my inclusion criteria of the programs, I also had to eliminate the evaluations of the programs that I researched. Almost of all the programs were ongoing, so there were no long-term impact studies done on whether they were reducing food insecurity in their community. It was not possible to apply any sort of evaluation to these programs because of they lack any long-term data on reduction of food insecurity.

While I may not have been able to evaluate the programs based on the guidelines set by the Center for Disease Control, I was still able to gather data from the programs based on short

term impact and define whether the intervention methods used were reaching community members or not. I was able to define these interventions within an anthropological model and evaluate the programs based on that model. While I may have had to adjust my process and analysis of my research, I was still able to develop discussions and recommendations for all food programs as well as for food programs in Delaware County. The culmination of my thesis has helped me become more comfortable with public health research and applying anthropology to public health research.

If I were to do this research again, I would like to have a more extensive list of programs that have documented whether they had any reductions of food insecurity. While food programs may always be ongoing, studies can be done to analyze a period of time to determine if food insecurity in their region was reduced. With more studies, a more in-depth analysis of food programs and the effectiveness of the intervention programs according to anthropological approaches can be done.

Introduction

Food insecurity has been an underrecognized public health issue in the United States. According to the United States Department of Agriculture Economic Research Service, in 2017, 11.8% of US households were food-insecure sometime throughout the year. Food insecurity is most often connected with low income households (Coleman-Jensen, Rabbitt, Gregory, & Singh, 2018). According to the article “Food Insecurity: A Public Health Issue” (2016) households that have limited or uncertain access to adequate healthy food experience poor nutrition and have difficulty managing diet-related chronic diseases like obesity. Food insecurity is a health inequity as those below the poverty line are more likely to be food insecure (Murthy, 2016). While there are a few federal food assistance programs to combat food insecurity, like the Supplemental Nutrition Assistance Program (SNAP), Women, Infants, and Children (WIC), the National School Lunch Program (NSLP), the School Breakfast Program (SBP), etc. this study focused on regional food aid/assistance programs.

The purpose of this study was to therefore gauge the success of regional food aid programs in reducing food insecurity. This study used the social-ecological model to look at regional food aid programs. The social-ecological model was developed to understand the multiple dimensions that influence health, like an individual’s social and physical environment. The model examines the following levels of influence a person’s health: individual, interpersonal, community, institutional, and public policy (McLeroy et al., 1988). Often these levels interact, such as community/institutional (Placek et al. 2019). The social-ecological model is a good approach for this study because it allows for intervention methods of regional food programs to be analyzed based on which level of influence they affect a person’s food insecurity.

This then could reveal which intervention methods have the most effectiveness of reducing food insecurity based on the social-ecological level they fell within.

Food insecurity has become a rising public health issue in Delaware County, Indiana with 17% of Delaware County being food insecure which is above the state of Indiana's average at 14% ("Food Insecurity," n.d.). Because of the high rate of food insecurity in Delaware County, the discussions and recommendations developed from this study were applied to local food aid programs in Delaware County, thus offering possible ways for the programs to reach more food insecure households in the county as well as lower the rate of food insecurity.

Study Hypotheses: The current study predicts that the regional food aid programs that used a multilevel approach reduced food insecurity rates, specifically if interventions at the community/institutional level of the social-ecological model. McLeroy et al. (1988) suggests that health promotion interventions, like that of food aid programs, have multiple levels of influence because they are based on beliefs, understandings, and theories of the determinants of behavior. Using the social-ecological model to analyze food insecurity intervention methods can reveal all the levels that influence a person's food insecurity, and through targeting all those influences, can be more effective in reducing food insecurity.

Methods

This study relied on a systematic literature review of articles about regional food programs that combated food insecurity in the community they were located in. The three databases that were used to find thirty articles were Google Scholar, PubMed, and Web of Science. To locate programs within these databases, the following key words were used:

“regional food aid programs”, “local food insecurity programs”, “food insecurity programs”, and “local food aid programs”. The references of the articles chosen were also used to search for additional, relevant, studies. To focus in on only the United States and what was being done to combat food insecurity around the country, the inclusion criteria for the programs were that they must take place in the United States and must be about food insecurity.

Analysis

Once all of the studies were found they were then assessed for the following themes: location, methods to combat food insecurity, time-lapse, context, definition of food insecurity, main findings, what works and why, and challenges. These themes were set before the studies were assessed to find any sort of consistency between the studies. Once all the themes were identified, the methods used by each study were separated into columns for each intervention method. These intervention methods were assessed by the social-ecological model and then labeled according to what social-ecological level the method fell within. Because there were many intervention methods, they needed to be classified into common categories. These categories included *redeemable coupons/benefits*, *food initiatives*, *education*, *services*, *outreach*, *staff training*, *collaboration*, and *public policy*. The definitions of food insecurity were also separated into a separate analysis to see variances and consistencies among the studies. The theme *main findings* was assessed to discover if the programs were reducing food insecurity in their community or reaching more food insecure community members. *Main findings* also helped to discover if the programs reported whether food insecurity was reduced in general.

Results

The analyses revealed that the majority of programs took place in the Northeast region of the United States (*Figure 1*).

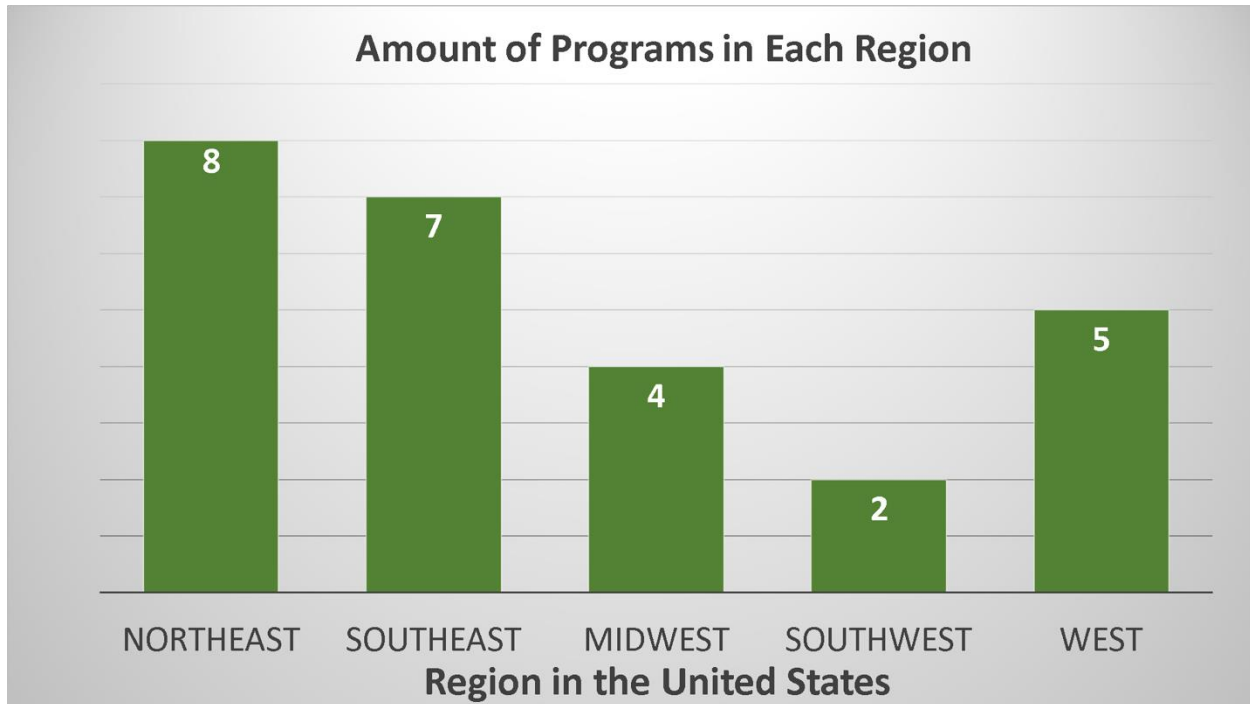


Figure 1 The number of programs in each region of the United States.

Based on what the articles were assessed for, the definitions of food insecurity varied among all of them, with no clear, consistent definition. Some of these definitions were “a struggle to access, obtain, and manage food resources;” “lacking regular access to food;” “the lack of access to enough quality food for an active and healthy life;” and “food insecurity is a socio-economic inability to obtain or purchase uncontaminated, nutritionally healthy food in sufficient amounts.” Only two studies utilized the United States Department of Agriculture definition of food insecurity. The USDA defines food insecurity as “the limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire foods in socially acceptable ways” (Coleman-Jensen et. al., 2018).

Most of the intervention methods and food initiatives used by the programs fell into the level of community/institutional of the social-ecological model. The interpersonal level was classified in the least amount of intervention methods, with only two intervention methods in the level: family/friend support and visiting homes. *Figure 2* displays the social-ecological model levels with each category of intervention methods.

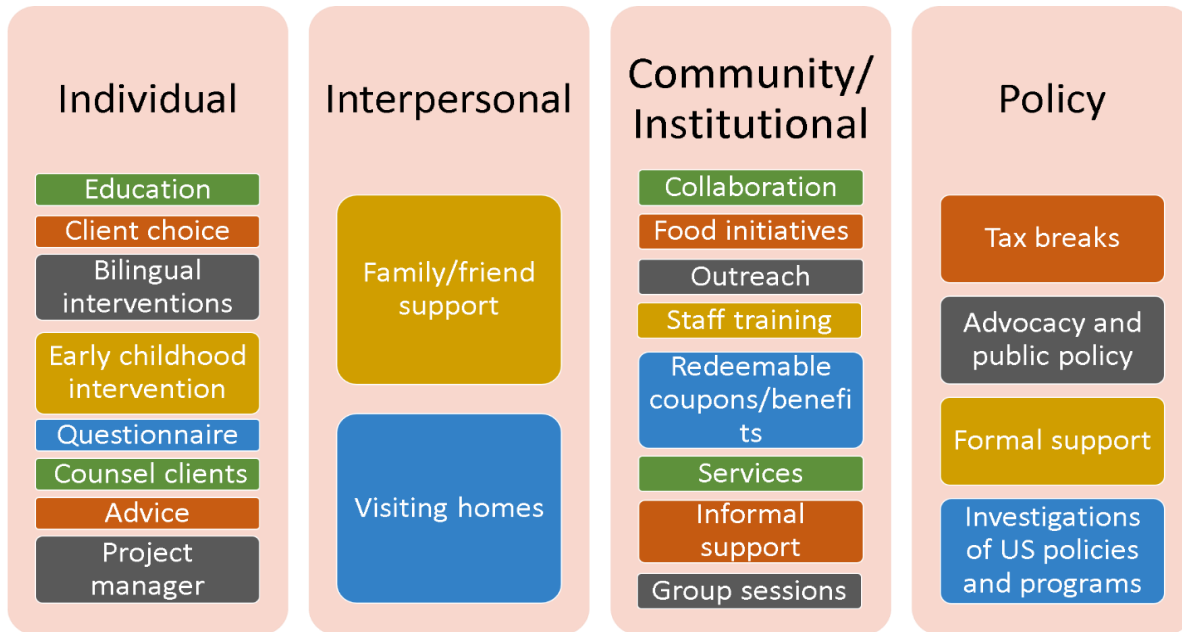


Figure 2 Intervention methods and the social-ecological level they fall within.

The majority of programs implemented intervention methods that focused on food initiatives. These food initiatives were programs that focused on changing stigma, access, distribution, collection, and service of food to increase rates of food security to the populations they were serving. Collaboration was the second most used intervention method among the programs. Collaboration included working and partnering with schools, businesses, and other organizations.

Discussion

The purpose of this study was to ascertain the success of regional food aid programs in reducing food insecurity. Food insecurity did not have a consistent definition among the studies. The lack of consistent definitions means that the studies and programs might have been trying to understand and alleviate different influences of food insecurity which can make it unclear as to what these programs are tackling. Without a clear, consistent definition of food insecurity, Programs cannot be repeated or evaluated because they all might be trying to combat different issues regarding food access.

Food insecurity is not an issue that can be tackled by focusing on the individual. While only nine studies reported whether there had been a reduction in food insecurity in the areas where the intervention methods were being implemented, these studies all incorporated intervention methods that were classified as community and institutional in the social-ecological model. This suggests that that there needs to be at least some intervention methods that are community and/or institutional based to have a program that shows results for reducing food insecurity among the users of the programs.

The intervention methods that were classified as “food initiatives” fell into the community and institutional level on the social-ecological model. These food initiatives looked to the community for participation and action in reducing food insecurity among community members as well as targeting ways to make it easier, accessible, and more affordable to get fresh food within the community. A program in Baltimore City, Maryland put on by the Baltimore City Health Department used a virtual supermarket as an intervention method to increase access to healthy foods in a food desert (Lagisetty et al., 2017). This virtual supermarket, located in community gathering places, like libraries and schools, had community members recruiting those

who did not have access to healthy foods in their neighborhoods as well as helping organize and deliver groceries to the community buildings. The second most commonly used intervention methods, classified as *collaboration*, also show how programs that use collaboration as a method in their programs are working with the community and institutions to reduce food insecurity in the community. One program in Northwest Arkansas, Samaritan Community Center, collaborates with other hunger relief organizations to meet the needs of the community members being served, collaborates with businesses and churches to recruit volunteers to work in their food pantries, soup kitchens, and community gardens, and works with the University of Arkansas to provide cooking and nutrition education classes to the community members utilizing the program (Rowland et al., 2018). Based on the results, programs should focus more on community/institutional level intervention methods. Recommendations created from the results are listed in *Figure 3*. Future research should focus on the effectiveness of community/institutional level intervention methods as well as developing more clear, consistent definitions of food insecurity.



Figure 3 Recommendations for understanding and reducing food insecurity.

While the study did reveal the programs that were utilizing community/institutional intervention methods, there may have been programs that had implemented these types of intervention methods to combat food insecurity in their location but were not reported on. A limitation of this study is that it relied on programs that were evaluated or studied. There may have been a reporting bias in which these programs had access to researchers or evaluators to report or study their program. Not all communities have access to researchers so these programs that are reducing food insecurity are going unreported. Future research should also look at the how reporting bias can affect which programs are being studied/reported on, and why other programs might not be reported on. There should also be research on less-known programs that may take place in smaller communities or low-income communities that may not have the resources or funding to have studies done evaluating the effectiveness of their programs.

Applications to Delaware County

While there may not have been any programs found based in Indiana, which could have been due to the constraints of databases and keywords used, from the results of this study, there are intervention methods that programs in Delaware County that would be beneficial to implement to reduce the level of food insecurity and reach more food insecure members of the community. There are four main organizations that have food programs in Delaware County. There are many food banks throughout the county, but the main food bank that services the entire county as well as other counties in east-central Indiana is the Second Harvest Food Bank. The Soup Kitchen of Muncie not only services Muncie, Indiana but also the entire Delaware County Community Monday through Friday. The Muncie Food Hub Partnership brings together diverse stakeholders, farmers, and consumers together to tackle food insecurity and provide community members locally grown produce and nutrition education. Inside Out Community Development Corporation seeks to provide meals and snacks to children in after-school programs to ensure that they will not go hungry when they get home for the evening. All these organizations are combating food insecurity through many different intervention methods throughout Delaware County.

While these organizations may implement different intervention methods, some of the interventions utilized could be classified, using the social-ecological model, as community/institutional. The methods that were similar among the programs were *food initiatives, collaboration, and outreach*. Second Harvest Food Bank has four programs that target food insecurity in Delaware County: Senior Safety Net Program, Tailgate Program, Hospital Food Pantry, and the College Pantry Program (“Food Insecurity,” n.d.). This food bank utilizes food initiatives to make sure that vulnerable community members can have access to their food

bank and their resources while collaborating with hospitals, other communities, and higher education institutes to reach these community members in need of food resources. The Soup Kitchen of Muncie, for example, provides a warm meal and a sack dinner to those who access the kitchen (“About,” n.d.). This program is local to Muncie, in the downtown area where people can either walk, drive, or take public transportation to get to the kitchen. The organization collaborates with local food businesses to receive unwanted or unused food to make meals for those that need them. They are not open every day of the week and are only in one location, but they do outreach to reach community members who would like to volunteer to work the kitchen as well as provide funds to get more variety of food that is not donated.

The Muncie Food Hub Partnership provides a mobile produce market that has locally sourced produce and provides nutrition education to those who use the market. It appears on certain days of each month through out the year around Delaware County to reach members of the community (“Current Initiatives,” 2017). They collaborate with farmers to receive produce to sell. Their outreach methods are implemented through their community food council to reach more community members; these methods include community meetings, volunteering, and sending feedback through their website or social media. Inside Out Community Development Corporation seeks to provide meals to food insecure members of the community cooked by members of the community (“Inside Out,” n.d.). Inside Out collaborates and does outreach with other nonprofits by providing food to these organizations, like the Boys and Girls Club of Muncie, and recruits and works with volunteers from all around the community through the use of social media and Ball State volunteer databases.

While these food programs may document how many community members they are reaching in Delaware County, to my knowledge, there are currently no studies or evaluations that

their intervention methods had led to a decrease in food insecurity. Even though the programs may have their own intervention methods to food insecurity, they still can implement the recommendations created from this study. All of these organizations need to define food insecurity in a consistent matter, so they are all tackling the same issue. This could be done by having all the organizations collaborate to create the definition or have the leadership of the organizations agree to use the USDA's definition of food insecurity. They also need to view food insecurity as a community development issue which can lead to the development of more community/institutional level intervention methods. These food programs do not seem to collaborate with each other, whether that be sharing in resources, food donations, distributors, etc. Collaboration can be a key tool in reaching a high amount of people experiencing food insecurity.

When these organizations work together they can reach more areas within Delaware County, receive funding from many different sources, and ultimately work together instead of separately. Viewing food insecurity as a community development issue in Delaware County helps to create a level of understanding that these organizations do not need to work separately to combat an issue that affects many people in the county. With the variety of food initiatives, they all are combating different facets of food insecurity that might not be tackled at one specific organization, thus here collaboration is key in making sure these food initiatives reach everyone experiencing food insecurity.

These organizations have the capacity and the funding to follow the recommendations generated from this study. One recommendation that specifically applies to Delaware County is to collaborate with the local university, Ball State University, to evaluate how food insecurity is being tackled and if the current food programs are reducing it. This collaboration is extended

through BSU's goal of "being a community engaged university" and thus can help create more solutions that can really leave a long-term impact on the community. Food programs and organizations in Delaware County can utilize the social-ecological model to learn about the many different ways their interventions affect the community members that use their resources and what these programs can do better to make sure that they are offering services that can influence all the dimensions that influence a person's health.

Public Health Implications

Food insecurity is a public health issue that needs more recognition among the general public, public health officials, and government officials. This study reveals that there is more to food insecurity than just the individual-level factors, such as the actions of a person who is food insecure. With a majority of programs using at least one intervention method that can be classified as community/institutional in the social-ecological model, understanding food insecurity as a community development issue can be the key to reducing food insecurity. Focusing on intervention methods that would be classified as "individual" is not enough to reduce food insecurity. The social-ecological model shows that human health and behavior is multi-faceted and should be analyzed at each level in a person's environment. The use of the social-ecological model can help to create and implement food aid programs in the United States that utilize every level of a person's environment. To make use of every level would allow for people who are food insecure to have access to programs and services that they can benefit from as individual, family, and community.

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